

# Hands on Systematic Innovation Problem Solving Tools - Knowledge

Presentation in the Module 10-202-2312

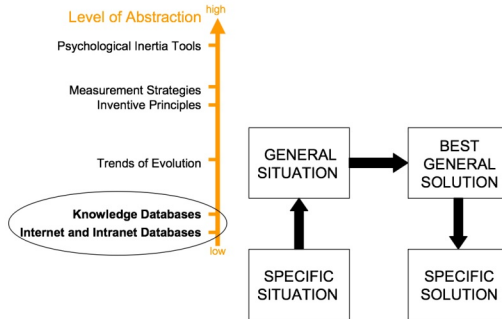
Cecilia Graiff

June 28<sup>th</sup>, 2022

# Introduction

- ▶ In today's world, access to a huge amount of (not only) business and management data is easily granted to everyone
- ▶ Systematic innovation methods are built around a subject-action-object (=noun-verb-noun) template
- ▶ The access to knowledge databases is only the first step to a long series of actions

# Levels of Abstraction



**Figure:** Levels of Abstraction in the Systematic Innovation Process  
(Hands on Systematic Innovation for Business and Management, Darrell Mann)

# Handling Knowledge

- ▶ Accessing Knowledge
- ▶ Using Knowledge Search Tools
- ▶ Beyond Knowledge: Context and Wisdom
- ▶ Knowledge Management

# Accessing Knowledge

- ▶ Knowledge sharing is better achieved when solutions are arranged in terms of functions
- ▶ From the business point of view: shift from selling washing powder to selling cleaned clothes
- ▶ From the technical side: What are the function words?
- ▶ Focus on the connection between things (=verbs), not on things *per se* (=nouns)!

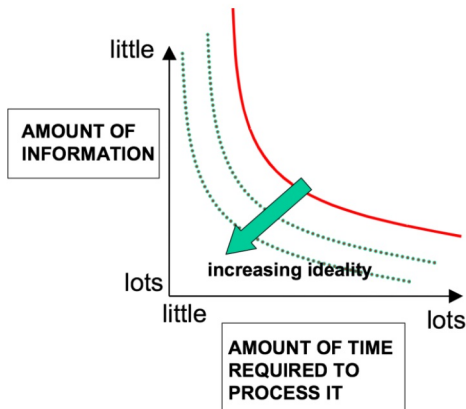
# Function Words

- ▶ Accomplishment Verbs
  - ▶ achieve, become, elect, improve, ...
- ▶ Creative Verbs
  - ▶ act, create, customize, draw, ...
- ▶ Clerical or Detail Verbs
  - ▶ approve, arrange, host, implement, ...
- ▶ Communication Verbs
  - ▶ address, advertize, entertain, inform, ...
- ▶ Financial Verbs
  - ▶ administrate, compute, budget, calculate, ...

# Function Words

- ▶ Helping Verbs
  - ▶ aid, clarify, coach, fortify, ...
- ▶ Management Verbs
  - ▶ administer, chair, handle, hire, ...
- ▶ Research Verbs
  - ▶ apply, check, examine, explore, ...
- ▶ Technical Verbs
  - ▶ adjust, alter, assemble, fabricate, ...
- ▶ Negative Verbs
  - ▶ corrupt, damage, destroy, hire, ...

# Information versus Time



**Figure:** The Information versus Time Conflict (Hands on Systematic Innovation for Business and Management, Darrell Mann)



# Knowledge Search Tools

- ▶ Search Engines
- ▶ Semantic Search Tools
- ▶ User-Defined Context Search Tools
- ▶ Intelligent Agent-Based Search Tools

# Search Engines

- ▶ Example: Google
- ▶ What you need probably is in the top 10
- ▶ The distance between words is an important parameter

# Semantic Search Tools

- ▶ Example: Goldfire/Knowledgist Product from Invention Machine
- ▶ Based on the subject-action-object template: given a sentence, these tools extract subject elements, action elements, and object elements.

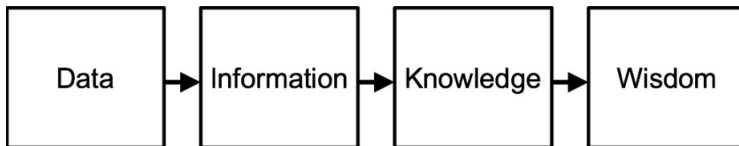
# User-Defined Context Search Tools

- ▶ The first two tools do not consider the context of the search
- ▶ Context Search Tools are built around context defined or user defined knowledge structures, like taxonomies or ontologies
- ▶ Problem: classifications mostly are ambiguous
- ▶ Latest generation tools try to overcome this problem by allowing concepts to migrate from one niche to another according to the user's wish of changing context

# Intelligent Agent-Based Search Tools

- ▶ Bottom-up rules
- ▶ The tool learns about the context by watching what the user does
- ▶ One (very simple) example could be Amazon

# Context and Wisdom



**Figure 16.4: The 'Wisdom' Evolution Trend**

**Figure:** The 'Wisdom' Evolution Trend (Hands on Systematic Innovation for Business and Management, Darrell Mann)

# Context and Wisdom

## What is Wisdom?

"Wisdom may be thought of as the successful application of knowledge; the successful application of knowledge means setting that knowledge into the specific and unique context of the situation." (Darrell Mann)

# Knowledge Management

- ▶ The ideas and concepts mentioned in this presentation allow the creation of an universally applicable knowledge framework
- ▶ "someone, somewhere has already solved this problem"



# Knowledge Management for Business Models

- ▶ What are the characteristics of successful business models for the management and protection of knowledge?
  1. Trust
  2. Faith in the power of self-organization system
  3. There should be no knowledge management departments
  4. The ability to forget knowledge that is no longer relevant

# Rules for the application of this method

- ▶ "Someone, somewhere already solved this problem" is not always applicable. Therefore, the method offers many research strategies to assist in the search of other solutions; Most importantly, they rely on functions.
- ▶ Since technology is proceeding fast, many research tools are provided. Choosing the most useful one is a very important step in the process.
- ▶ There are no short-cuts and there is no substitute context-driven application of knowledge!